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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,550	10/14/2003	Kumar Sundararajan	021970-000510US	3475
20350 7590 08/17/2007 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER HOANG, DANIEL L	
			ART UNIT 2136	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/686,550

Applicant(s)

SUNDARARAJAN ET AL.

Examiner

Daniel L. Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

CLAIMS PRESENTED

Claims 1-24 are presented.

Response to Arguments

1. Applicant's arguments see page 7 of 12, filed 6/07/07, with respect to the previous office action's objections and 112 second paragraph rejections have been fully considered and are persuasive. The objection of claim 23 and 112 rejections of claims 6 and 17 has been withdrawn.
2. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 14, and 24 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1:

Said claim recites the limitation, "a plurality of interfaces, the plurality of interfaces including a first interface". Applicant's specification only discloses one interface. It is unclear to examiner which other interface(s) applicant intends to claim in the above limitation. Examiner requests that applicant show where support for this limitation occurs in applicant's specification or amend the claim so that it complies with the specification. For purposes of examination, examiner is interpreting the claim language to comply with applicant's specification.

Said claim further recites the limitation, "a tracking component being configured to provide a statistics based on data flows associated with the plurality of interfaces". Applicant's specification does not disclose a tracking component configured to provide statistics. Tracking in I/Os between the server and the storage subsystem is disclosed in paragraph 0029 of the specification which examiner can assume to be the tracking of data flows. But even with this assumption, only tracking of data flows occurs, it is unclear where statistics are being provided based on the tracking of these data flows. A statistics processor is disclosed in paragraph 0049, which collects statistics based on configured rules. It is unclear whether this statistics processor is being claimed by the limitation, "a tracking component". Even if examiner were to assume that this was the case, "collecting statistics based on configured rules" does not necessarily mean "configured to provide statistics based on data flows". Examiner requests that applicant show support for the above limitation in the specification or amends the claim so that said limitation is not present in the claim language.

Said claim further recites the limitation, "the type including at least initiator, data, and terminator". As evident in applicant's disclosure in paragraph 0006 and 0007, "the type is selected from at least an initiator, data, or terminator". It is interpreted that applicant's claim currently intends to claim that the type includes all 3 but the disclosure only specifies at least 1 of the 3. For purposes of examination, examiner is interpreting the claim language to comply with applicant's specification.

Said claim further recites the limitation, "the encryption/decryption processing being adapted to perform encryption/decryption based on the statistics and the type". Examiner assumes that the word "processing" is a grammatical error and assumes the claim should read, "the encryption/decryption processor..." Applicant's specification does not disclose said processor being able to perform encryption/decryption based on the statistics and the type. Applicant only discloses that the processor is able to perform encryption/decryption block by block. There is no mention of encryption/decryption being performed based on statistics and type. Examiner requests that applicant show where support for the above limitation occurs in the specification or amends the claim so that it complies with the specification. For purposes of examination, examiner is interpreting the claim language to comply with applicant's specification.

For the above reasons, said claim is rendered indefinite. Appropriate correction is required.

Claims 14 and 24 are also similarly rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow, and further in view of Amara, US Patent No. 6,674,743.

As per claim 1:

Chow teaches:

Apparatus for security applications, the apparatus comprising:

an interface coupled to a storage network, the interface being adapted to receive a frame from the storage network;

[see fig. 2, element 208]

a tracking component being configured to track data flows associated with the interface;

[see fig. 7b, wherein incoming packet passes through the packet parser into the packet memory.

Concurrently, the packet structure information is sent to the packet bit mask generator.]

Examiner interprets this as being analogous to tracking data flows.

a classifier coupled to the interface, the classifier being adapted to determine an information type associated with the frame, the type being an initiator, data, or terminator, the classifier being adapted to determine header information associated with the frame; and

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[see fig. 2, element 210]

a content addressable memory coupled to the classifier.

[see fig. 2, element 216]

Chow does not teach:

an encryption/decryption processor coupled the security action processor, the encryption/decryption processor being adapted to encrypt/decrypt the data block by block.

Amara teaches a packet forwarding apparatus that comprises the above limitation not taught by Chow.

[see col. 5, lines 16-20] "Policy engine 126 applies a policy to the internal packet s. Specifically, policy engine 126 examines one or more selector fields present in the internal packet s. Typical selector fields include the source address, destination address, source port, destination port, and protocol type. Policy engine 126 also applies a set of rules specifying the manner in which a given packet should be handled if the selector fields of the given packet match certain predefined criteria. Such handling can include without limitation dropping the packet, logging the packet, encrypting or decrypting the packet."

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the Chow invention to include the encryption/decryption taught by Amara in order to secure data coming in and going out of the system.

As per claim 2, Chow teaches:

Apparatus of claim 1 wherein the content addressable memory comprises a rule portion and a flow portion, the rule portion being adapted to determine header information and command information from the initiator frame and the flow portion being adapted to provide a flow based upon the header information.

[see paragraph 0052] "Using the search key generated by the method described herein, a lookup or search is done on the classification database contained in the CAM (arrow 826). The resulting content address or entry address 218 (FIG. 2), matching the search key 214 (FIG. 2), obtained from the classification database in CAM 806 is then used to perform a memory read into an associated memory 814 (arrow 828), to determine the policy of the packet received as well as the treatment of that packet, as shown by the arrow 826. Depending on the policy received from the CAM controlling hardware 804 and the packet information retrieved from packet memory 810, the egress manager 812 performs some policy action (e.g., metering and shaping, quality of service provisions, packet counting and billing actions, DSCP remarking, CPU actions, etc.), as dictated in the action content database, and sends out the resulting packet 834 to the appropriate network (or receiving port)."

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As per claim 3:

Chow teaches:

Apparatus of claim 1 further comprising:

a central processing unit coupled to the classifier;

[see fig. 10, element 1002]

an action processor coupled to the central processing unit;

[see fig. 2, element 220]

a security action processor SAP processor coupled to the central processing unit, the SAP being adapted to process data block by block; and

[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet."

Chow does not teach:

an encryption/decryption processor coupled the security action processor, the encryption/decryption processor being adapted to encrypt/decrypt the data block by block.

Amara teaches a packet forwarding apparatus that comprises the above limitation not taught by Chow.

[see col. 5, lines 16-20] "Policy engine 126 applies a policy to the internal packets. Specifically, policy engine 126 examines one or more selector fields present in the internal packets. Typical selector fields include the source address, destination address, source port, destination port, and protocol type. Policy engine 126 also applies a set of rules specifying the manner in which a given packet should be handled if the selector fields of the given packet match certain predefined criteria. Such handling can include without limitation dropping the packet, logging the packet, encrypting or decrypting the packet."

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the Chow invention to include the encryption/decryption taught by Amara in order to secure data coming in and going out of the system.

As per claim 4, Chow teaches:

Apparatus of claim 1 wherein the initiator determines a read or a write process.

[see paragraph 44] "The packet parser 504 also reads the incoming packet 208 to determine the type and structure of such packet."

As per claim 8, Chow teaches:

Apparatus of claim 1 wherein the classifier is provided on an integrated circuit chip.

[see fig. 8, element 802]

As per claim 9, Chow teaches:

Apparatus of claim 1 wherein the classifier is adapted to maintain wire speed operation while determining the information type and header information associated with the frame.

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

As per claim 10, Chow teaches:

Apparatus of claim 1 further comprising a flow context random access memory coupled to the classifier, the flow context random access memory being adapted to store a policy based upon a flow, the flow being associated with the header information.

[see fig. 2, element 220]

As per claim 11, Chow teaches:

Apparatus of claim 1 wherein the classifier is used in determining access controls to target volumes & partitions.

[see paragraph 53] "Once the intelligent software 904 is loaded and executed, the user is provided with an interface enabling such user to define a set of selection criteria. Another embodiment, not illustrated in the figure, is wherein the user 902 has access to the intelligent software, but such software is not directly contained in the user's computer (e.g., software contained in a network computer). The intelligent software may be written in a programming language, such as C, C++, and the like. Various configurations on how such intelligent software may be deployed and implemented are known in the art."

As per claim 12, Chow teaches:

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Apparatus of claim 1 wherein the classifier is used in allowing access to specific targets only to authenticated hosts and, in some scenarios applications running on the hosts.

[see above rejection of claim 11, "access to the intelligent software"]

As per claim 13, Chow teaches:

Apparatus of claim 1 wherein the apparatus is operable in a NULL port in a storage area network.

[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet. For example, an Internet Service Provider router that needs to perform packet filtering, policy routing, accounting and billing, traffic rate limiting, and traffic shaping may use the present invention to access certain fields from the incoming packet information, notably, the destination IP, source IP, destination L4 port number, source L4 port number, and protocol.

As per claim 14:

Chow teaches:

Apparatus for security applications of storage area networks, the apparatus comprising:
an interface coupled to a storage network, the interface being adapted to receive a frame from the storage network;

[see fig. 2, element 208]

a tracking component being configured to track data flows associated with the interface;

[see fig. 7b, wherein incoming packet passes through the packet parser into the packet memory.

Concurrently, the packet structure information is sent to the packet bit mask generator.]

Examiner interprets this as being analogous to tracking data flows.

a classifier coupled to the interface, the classifier being adapted to determine an information type associated with the frame, the type being an initiator, data, or terminator, the classifier being adapted to determine header information associated with the frame; and

[see fig. 2, element 210]

a content addressable memory coupled to the classifier, the content addressable memory comprises a rule portion and a flow portion, the rule portion being adapted to determine header information and

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command information from the initiator frame and the flow portion being adapted to provide a flow based upon the header information;

[see fig. 2 element 216]

a central processing unit coupled to the classifier;

[see fig. 10, element 1002]

an action processor coupled to the central processing unit;

[see fig. 2, element 220]

a security action processor SAP processor coupled to the central processing unit, the SAP being adapted to process data block by block; and

[see paragraph 42] "The resulting content address or entry address 218, matching the search key 214, obtained from the classification database 216 is then used to perform a memory read into an associated memory 220, which contains the specific actions 222 that should be applied to the packet."

Chow does not teach:

an encryption/decryption processor coupled the security action processor, the encryption/decryption processor being adapted to encrypt/decrypt the data block by block.

Amara teaches a packet forwarding apparatus that comprises the above limitation not taught by Chow.

[see col. 5, lines 16-20] "Policy engine 126 applies a policy to the internal packet s. Specifically, policy engine 126 examines one or more selector fields present in the internal packet s. Typical selector fields include the source address, destination address, source port, destination port, and protocol type. Policy engine 126 also applies a set of rules specifying the manner in which a given packet should be handled if the selector fields of the given packet match certain predefined criteria. Such handling can include without limitation dropping the packet, logging the packet, encrypting or decrypting the packet."

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the Chow invention to include the encryption/decryption taught by Amara in order to secure data coming in and going out of the system.

As per claim 15, Chow teaches:

Apparatus of claim 14 wherein the initiator determines a read or a write process.

[see paragraph 44] "The packet parser 504 also reads the incoming packet 208 to determine the type and structure of such packet."

As per claim 19, Chow teaches:

Apparatus of claim 14 wherein the classifier is provided on an integrated circuit chip.

[see fig. 8, element 802]

As per claim 20, Chow teaches:

Apparatus of claim 14 wherein the classifier is adapted to maintain wire speed operation while determining the information type and header information associated with the frame.

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

As per claim 21, Chow teaches:

Apparatus of claim 14 further comprising a flow context random access memory coupled to the classifier, the flow context random access memory being adapted to store a policy based upon a flow, the flow being associated with the header information.

[see fig. 2, element 220]

As per claims 5 and 16:

Apparatus of claim 1 wherein the content addressable memory comprises at least two MBit.

Applicant does not disclose within the specification as to what size the content addressable memory may comprise. Examiner interprets this as merely a matter of design choice.

As per claims 6, 7, 17, and 18:

The Chow and Amara references have been discussed above. They do not specifically cite that the interface is adapted to receive the frame through a fiber channel in a SCSI format. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add to the Chow and Amara inventions in order to receive frames through a fiber channel in a SCSI format because fiber

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channels increase the distance in which frames can travel and SCSI frames can be transported at higher speeds.

As per claim 22, Chow teaches:

Apparatus of claim 14 wherein the apparatus is not a switch or a router or a virtualization device.

[see fig. 2]

As per claim 23, Chow teaches:

Apparatus of claim 22 wherein the apparatus further comprises a switch or a router or a virtualization device.

[see fig. 2, element 204]

As per claim 24, Chow teaches:

A method for security applications for storage area networks, the method comprising:

receiving one or more frames at a security apparatus from a storage area network device through a fibre channel, the storage area network device being operated by client device, the client device being coupled to the storage area network device;

[see fig. 2, element 208]

determining a frame type of the one or more frames at the security apparatus;

[see fig. 2, element 210]

creating a flow process through one or more processors if the frame type of an initiator frame;

[see fig. 2 element 216]

processing one or more subsequent frames associated with the flow process through the one or more processors at wire speed;

[see paragraph 23] "The use of the invention allows flexibility in the choice of packet fields, thereby providing a router with reconfigurable classification functions, without any complex programming. This would reduce the cost of replacing routers, allow routers to be placed anywhere within the Internet topology, and allow routers to simultaneously meet different market requirements."

whereupon the processing is substantially transparent to a user of the client device.

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[see paragraph 37, wherein the system administrator configures the system but the processing is implemented by the system and is essentially transparent to the user.

CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

POINTS OF CONTACT

- * Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
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Alexandria, VA 22314

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*. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Hoang whose telephone number is 571-270-1019. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel L. Hoang
8/14/07

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